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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
BHATNAGAR, ANAND P	
ART UNIT	**PAPER NUMBER**
2624	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/809,393	ITO, WATARU	
	Examiner	Art Unit	
	Anand Bhatnagar	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/26/04, 6/30/04, 6/4/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 5, 6, 15-18, 23, and 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 5, 6, 15-18, 23, and 24 define a "recording medium" embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the

descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "recording medium" can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5, 7, 10, 11, 14, 15, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoyama et al. (U.S. patent 6,535,651 B1).

Regarding claims 1, 3, and 5: Aoyama et al. discloses an image processing method, comprising:

performing sharpness enhancement processing on an image signal, picking up an image through sampling in a predetermined sampling pattern to

acquire an image signal representing the image (fig. 1 elements 10-60, col. 4 lines 30-59, and col. 5 lines10 to col. 6 lines 39, wherein the sharpness of the image is performed based on the sampling of the image and the interpolation), and

appending sampling information, which concerns the predetermined sampling pattern, to the image signal, which has been acquired, wherein different sharpness enhancement processing is performed on the image signal and in accordance with the sampling information to obtain a processed image signal (fig. 1 elements 10-60, col. 4 lines 30-59, and col. 5 lines10 to col. 6 lines 39, wherein the sharpness of the image is performed based on the sampling of the image and the interpolation. The interpolation and/or sharpness information is read as appending sampling information. The sharpness instructions are based on the sampling of the image, the interpolation, etc. This is read as different sharpness enhancement processing because the instructions would vary on the sampling and the interpolation needed).

Regarding claim 7: An image transforming method, comprising the step of performing transforming processing on a square sampling image signal, which has been obtained from a checkered sampling image signal by performing a predetermined interpolating operation process on the checkered sampling image signal to form signal values corresponding to empty pixel positions in an array of pixels represented by image signal components of the checkered sampling image signal, wherein the transforming processing is a processing for performing

an interpolating operation process, which is different from the predetermined interpolating operation process, on the square sampling image signal to form new signal values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal (See claim 1. See col. 5 lines 9-18. Further Ayoama et al. discloses wherein the sampling can be different including rhombic, i.e. read as checkered, and when interpolation is performed a different shape would be formed including a square form).

Regarding claim 10: The image transforming method wherein sampling information, which represents whether an image represented by an original image signal has been picked up through checkered sampling or square sampling, is appended to the square sampling image signal, and the processing for performing the different interpolating operation process to obtain the new square sampling image signal is performed only in cases where it has been discriminated in accordance with the sampling information that the image has been picked up through the checkered sampling. See claim 7.

Regarding claim 11: An image transforming apparatus, comprising transforming processing means for performing transforming processing on a square sampling image signal, which has been obtained from a checkered sampling image signal by performing a predetermined interpolating operation process on the checkered sampling image signal to form signal values

corresponding to empty pixel positions in an array of pixels represented by image signal components of the checkered sampling image signal, wherein the transforming processing means performs the transforming processing for performing an interpolating operation process, which is different from the predetermined interpolating operation process, on the square sampling image signal to form new signal values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal. See claim 7.

Regarding claim 14: The image transforming apparatus wherein sampling information, which represents whether an image represented by an original image signal has been picked up through checkered sampling or square sampling, is appended to the square sampling image signal, the apparatus further comprises discrimination means for discriminating in accordance with the sampling information whether the image has been picked up through the checkered sampling or not, and the transforming processing means performs the processing for performing the different interpolating operation process to obtain the new square sampling image signal only in cases where it has been discriminated by the discrimination means that the image has been picked up through the checkered sampling. See claim 7.

Regarding claim 15: A recording medium, on which a program for causing a computer to execute an image transforming method has been recorded and

from which the computer is capable of reading the program, the image transforming method comprising performing transforming processing on a square sampling image signal, which has been obtained from a checkered sampling image signal by performing a predetermined interpolating operation process on the checkered sampling image signal to form signal values corresponding to empty pixel positions in an array of pixels represented by image signal components of the checkered sampling image signal, wherein the program comprises, as the procedure for performing the transforming processing, a procedure for performing a processing for performing an interpolating operation process, which is different from the predetermined interpolating operation process, on the square sampling image signal to form new signal values corresponding to the empty pixel positions, in lieu of the signal values having been formed with the predetermined interpolating operation process, and thereby to obtain a new square sampling image signal. See claim 7.

Regarding claim 18: The recording medium wherein sampling information, which represents whether an image represented by an original image signal has been picked up through checkered sampling or square sampling, is appended to the square sampling image signal, the program further comprises the procedure for discriminating in accordance with the sampling information whether the image has been picked up through the checkered sampling or not, and the procedure for performing the transforming processing is a procedure for performing the processing for performing the different interpolating operation process to obtain

the new square sampling image signal only in cases where it has been discriminated by the procedure for the discrimination that the image has been picked up through the checkered sampling. See claim 7.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoyama et al. (U.S. patent 6,535,651 B1).

Regarding claims 2, 4, and 6: Aoyama et al. not teach the feature of "wherein the different sharpness enhancement processing is a processing in accordance with frequency characteristics of the image signal, which has been acquired, due to the sampling pattern." This is a well known feature in the art of image processing. Examiner takes OFFICIAL NOTICE. It would have been obvious to one ordinary skilled in the art to incorporate this well known feature. One ordinary skilled in the art would have been motivated to incorporate this feature based on the availability of the hardware and/or software available at the time of invention.

Regarding claims 8, 12, 16, 19, 21, and 23: Ayoama et al. does not teach the feature of "wherein the different interpolating operation process is an

interpolating operation process, in which a filtering process is performed on signal values of the square sampling image signal other than the signal values having been formed with the predetermined interpolating operation process, the filtering process being performed with an interpolation filter having an array of filter factors obtained by rotating an array of filter factors in a N.times.M high order interpolation filter, where at least either one of N and M is at least 3, by an angle of 45 degrees." This is a well known feature in the art of image processing. Examiner takes OFFICIAL NOTICE. It would have been obvious to one ordinary skilled in the art to incorporate this well known feature. One ordinary skilled in the art would have been motivated to incorporate this feature based on the availability of the hardware and/or software available at the time of invention.

Regarding claims 9, 13, 17, 20, 22, and 24: Ayoama et al. does not teach the feature of "wherein the filter factors are filter factors of a 4x4 interpolation filter for performing a cubic spline interpolating operation process. This is a well known feature in the art of image processing. Examiner takes OFFICIAL NOTICE. It would have been obvious to one ordinary skilled in the art to incorporate this well known feature. One ordinary skilled in the art would have been motivated to incorporate this feature based on the availability of the hardware and/or software available at the time of invention.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Weldy et al. (U.S. patent 6,188,804 B1) for a image sampling and interpolation method.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Bhatnagar whose telephone number is 571-272-7416. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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January 07, 2008